



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/611,437	06/30/2003	Anthony F. Voellm	50037.188US01	1966

27488 7590 12/20/2006  
MERCHANT & GOULD (MICROSOFT)  
P.O. BOX 2903  
MINNEAPOLIS, MN 55402-0903

EXAMINER
----------

ALHIJA, SAIF A

ART UNIT	PAPER NUMBER
----------	--------------

2128

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/20/2006	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/611,437	VOELLM ET AL.	
	Examiner	Art Unit	
	Saif A. Alhija	2128	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 30 June 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/18/04</u> .  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

1. Claims 1-24 have been presented for examination.

**Information Disclosure Statement**

2. The information disclosure statement (IDS) submitted on 18 October 2004 is in compliance with the provisions of 37 CFR 1.97. Accordingly, the Examiner has considered the IDS as to the merits.

**Claim Rejections - 35 USC § 101**

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

**MPEP 2106 recites:**

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result" State Street 149 F.3d at 1373, 47 USPQ2d at 1601-02. A process that consists solely of the manipulation of an abstract idea is not concrete or tangibles. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed.Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459.

3. **Claims 1-24 are rejected** under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

- i) Claims 1, 13, 18, and 19 recite a computer readable medium having components or encoded with a data structure as well as a computer implemented method. The claims merely discuss configuring, computing, as well as a plurality of data fields. As such the claims do not produce a useful, concrete, and tangible result.

- ii) With regards to Claims 13 and 18, MPEP Section 2106.01 states that the definition of "data structure" is "a physical or logical relationship among data elements, designed to support specific

Art Unit: 2128

data manipulation functions.” The New IEEE Standard Dictionary of Electrical and Electronics Terms 308 (5th ed. 1993). The data structure claimed appears to contain non-functional descriptive language since the claim limitations are merely a collection of data fields. As such the claims do not produce a useful, concrete, and tangible result.

iii) The specification of the instant application in paragraph 18 states

[0018] Computing device 100 may also contain communication connections 116 that allow the device to communicate with other computing devices 118, such as over a network. Communication connections 116 is one example of communication media. Communication media may typically be embodied by computer readable instructions, data structures, program modules, or other data in a modulated data signal, such as a carrier wave of other transport mechanism, and includes any information delivery media. The term “modulated data signal” means a signal that has one or more of its characteristics set or changed in such a manner as to encode information in the signal. By way of example, and not limitation, communication media includes wired media such as a wired network or direct-wired connection, and wireless media such as acoustic, RF, infrared and other wireless media. The term computer readable media as used herein includes both storage media and communication media.

A carrier wave as well as a “modulated data signal” are not tangible and are also non-statutory. As such Claims 1-24 are rendered non-statutory.

iv) Claims 1-24 are drawn to a mere manipulation of data fields and/or software and therefore the claims do not produce a useful, concrete, and tangible result.

v) The claims appear to recite a computer program. It should be noted that code (i.e., a computer software program) does not do anything per se. Instead, it is the code stored on a computer that, *when executed*, instructs the computer to perform various functions. The following claim is a generic example of a proper computer program product claim;

A computer program product embodied on a computer-readable medium and comprising code

Art Unit: 2128

that, when executed, causes a computer to perform the following:

Function A  
Function B  
Function C, etc...

Appropriate correction is required.

All claims dependent upon a rejected base claim are rejected by virtue of their dependency.

**Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. **Claims 1-3, and 5-24 are rejected** under 35 U.S.C. 102(b) as being clearly anticipated by Forecast et al. “Dynamic Modeling for Resource Allocation in a File Server”, U.S. Patent No. 6,230,200, hereafter referred to as Forecast.

**Regarding Claim 1:**

**The reference discloses** A computer-readable medium having computer-executable components, comprising: a server component configured to receive from a client information that indicates the client needs additional resources to perform a transaction, the server component being further configured to determine if allocating to the client the additional resources puts the server component in a resource constrained situation, and if so, to rebalance resources currently allocated to a plurality of existing clients. (Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)

**Regarding Claim 2:**

Art Unit: 2128

**The reference discloses** The computer-readable medium of claim 1, wherein the server component executes on a server in a network environment. (**Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64**)

**Regarding Claim 3:**

**The reference discloses** The computer-readable medium of claim 1, wherein the server component is further configured to allocate the client the additional resources needed if the server determines that such allocation does not create the resource constrained situation. (**Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64**)

**Regarding Claim 5:**

**The reference discloses** The computer-readable medium of claim 1, wherein the server component determines if the resource constrained situation occurs by comparing a current number of resources allocated to the client with a total number of available resources. (**Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.**)

**Regarding Claim 6:**

**The reference discloses** The computer-readable medium of claim 5, wherein the determination further comprises comparing a current number of resources allocated to every client connected to the server component with the total number of available resources. (**Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.**)

**Regarding Claim 7:**

Art Unit: 2128

**The reference discloses** The computer-readable medium of claim 6, wherein the determination further comprises comparing the current number of resources allocated to every client connected to the server component and a number of requested resources with the total number of available resources.

**(Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)**

**Regarding Claim 8:**

**The reference discloses** The computer-readable medium of claim 1, wherein the rebalance of the resources is performed based on an equitable distribution of the resources among the plurality of clients.

**(Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)**

**Regarding Claim 9:**

**The reference discloses** The computer-readable medium of claim 8, wherein the equitable distribution of the resources is based on a number of clients connected to the server component.

**(Abstract. Column 15-16 discuss constraint conditions.)**

**Regarding Claim 10:**

**The reference discloses** The computer-readable medium of claim 9, wherein at least one client connection has a preferential weighting with respect to other clients. **(Column 12, Line 29-40)**

**Regarding Claim 11:**

**The reference discloses** The computer-readable medium of claim 8, wherein the equitable distribution of the resources is based on a number of open files associated with each client connected to

Art Unit: 2128

the server component. (Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)

**Regarding Claim 12:**

**The reference discloses** The computer-readable medium of claim 11, wherein at least one open file has a preferential weighting with respect to other open files. (Column 12, Line 29-40)

**Regarding Claim 13:**

**The reference discloses** A computer-readable medium encoded with a data structure, comprising: a plurality of data stores, each data store being associated with a different client connection to a server, each data store including: a credits used field that identifies a number of resource credits currently in use by a client corresponding to the data store; a credit limit field that identifies a number or resources available to the client corresponding to the data store; a pending count field that identifies a number of transactions that are pending due to an unavailability of sufficient resources to handle the transactions; and an open files field that identifies a number of files that are currently in use by the client. (Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)

**Regarding Claim 14:**

**The reference discloses** The computer-readable medium of claim 13, wherein the data store further comprises a flag field that identifies whether the corresponding client has acknowledged a resource-related message. (Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)



Art Unit: 2128

**Regarding Claim 15:**

**The reference discloses** The computer-readable medium of claim 13, wherein a value of the pending count field is provided by the client in connection with a transaction request message. **(Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)**

**Regarding Claim 16:**

**The reference discloses** The computer-readable medium of claim 15, wherein a value of the credit limit field is modified based on the value of the pending count field. **(Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)**

**Regarding Claim 17:**

**The reference discloses** The computer-readable medium of claim 13, wherein values for the credit limit fields of the plurality of data stores is rebalanced based on an equitable distribution of available resources. **(Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)**

**Regarding Claim 18:**

**The reference discloses** A computer-readable medium encoded with a data structure, comprising: a credits used field that identifies a number of resource credits currently in use by a client corresponding to the data structure; a credit limit field that identifies a number or resources available to the client; a pending count field that identifies a number of transactions that are pending due to an unavailability of sufficient resources to handle the transactions; and a pending queue field that includes

Art Unit: 2128

transaction messages corresponding to the transactions that are pending. (Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)

**Regarding Claim 19:**

**The reference discloses** A computer-implemented method, comprising: computing a total number of client connections, each client connection being associated with a client connected to a server, each client having a credit limit that identifies a number of resources that are allocated to the client computing a total number of pending requests that identifies a number of transaction requests that are not being handled due to a limitation on resources; computing a total number of credits in use; and if the total number of pending requests and the total number of credits in use combined exceeds a total number of available resources, calculating a new credit limit for each of the clients connected to the server; and reallocating the total available resources in accordance with the new credit limits. (Abstract. Column 6, Lines 15-30. Column 13, Line 15- Column 14, Line 30. Column 64)

**Regarding Claim 20:**

**The reference discloses** The computer-implemented method of claim 19, wherein the reallocation is based on each client connection receiving a pro rata share of the total available resources. (Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions and priority which reads on "pro rata". Column 64.)

**Regarding Claim 21:**

**The reference discloses** The computer-implemented method of claim 20, wherein the pro rata share of the total available resources is based on the total available resources divided among the total

Art Unit: 2128

number of client connections. (Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)

**Regarding Claim 22:**

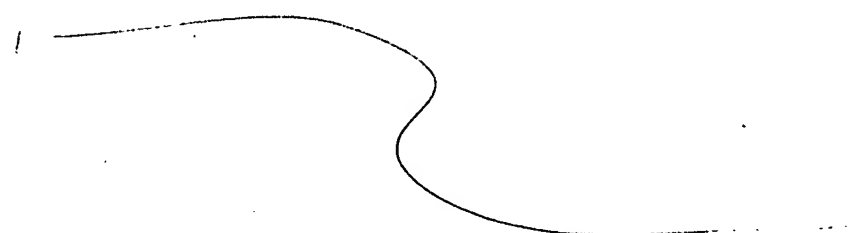
The reference discloses The computer-implemented method of claim 21, wherein the total available resources are divided evenly among the total number of client connections. (Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)

**Regarding Claim 23:**

The reference discloses The computer-implemented method of claim 21, wherein at least one of the client connections is weighted more heavily than another of the client connections. (Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions and priority. Column 64.)

**Regarding Claim 24:**

The reference discloses The computer-implemented method of claim 20, wherein the pro rata share for a particular client is based on a proportion of a total number of open files to a number of open files for the particular client. (Abstract. Column 6, Lines 15-30. Column 12, Lines 57-Column 13, Line 6 discuss priority. Column 13, Line 15- Column 14, Line 30. Column 15-16 discuss constraint conditions. Column 64.)



**Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. **Claim(s) 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Forecast in view of Haugseth et al. "Computer Network Controller", U.S. Patent No. 6,856,619, hereafter referred to as Haugseth.**

**Regarding Claim 4:**

**The reference does not explicitly disclose** The computer-readable medium of claim 1, wherein the clients and the server component communicate using a light weight input/output protocol.

The light weight input/output protocol is defined in the specification in paragraph 21 as:

[0021] Each client has a connection (e.g., connections 204, 206, 208, respectively) to the server 201. The clients and the server 201 may communicate using one of many different communication protocols. One communication protocol that may be used for distributed file systems is the Light Weight I/O (LWIO) protocol. The LWIO protocol enables an application operating on one computer (i.e., the client 203) to communicate directly with a file system on the server 201 without necessarily involving kernel-mode resources on the client computer. Bypassing kernel-mode operations reduces the overhead associated with distributed file access, resulting in improved performance over other protocols, like TCP/IP. Clients can, however, have both user and kernel level components performing file I/O transactions on the server 201.

The **Forecast** reference discusses in Column 10, Lines 9-19 utilizing various communication protocols but does not explicitly refer to a LWIO protocol.

However, the **Haugseth** reference discloses SAN/RDMA, which as per the definition of LWIO protocol in the specification, utilize bypass of kernel mode resources and allow for direct access.

(Haugseth. See Claim 1 as well as Column 2, Lines 35-60)

It would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a LWIO protocol as defined in the specification and referred to in **Haugseth** as SAN/RDMA in order to allow for increased performance and reducing time for the resource allocation discussed in **Forecast**.

(Haugseth. Column 1, Lines 40-50) (Forecast. Column 1, Lines 15-20. Performance Guarantees)

#### Conclusion

6. All Claims are rejected.

Art Unit: 2128

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Saif A. Alhija whose telephone number is (571) 272-8635. The examiner can normally be reached on M-F, 11:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kamini Shah can be reached on (571) 272-2279. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAA

December 6, 2006

  
HUGH JONES Ph.D.  
PRIMARY PATENT EXAMINER  
TECHNOLOGY CENTER 2100